

REMARKS

Claims 1-14 are currently pending in the present application. Fig. 7 was objected to for missing a letter after “port 2.” The disclosure was objected to because of informalities. Claims 1 and 2 were rejected under 35 U.S.C. 102(b) as being anticipated by Black et al. Claims 3-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Black, and further in view of Global Engineering (“Fibre Channel Arbitrated Loop” from IDS).

Claims 1, 3; and 6-8 have been amended. Reconsideration and reexamination of the application in view of the amendments and following remarks are respectfully requested.

Fig. 7 was objected to because a letter was missing after “port 2”. A replacement drawing sheet for FIG. 7 is enclosed herewith. With this amendment, it is respectfully submitted that the objection to the drawing has been overcome.

The disclosure was objected to for containing informalities. In particular, the Examiner stated that the first “112” in [0381] should be “111” based on the description and “[a]ll abbreviations need to be spelled out first time they appear.”

The disclosure has been amended to correct “the port 112” in [0381] and now reads “through 112 the port.” Further, by adding a new paragraph to the specification before paragraph [0067], all abbreviations are now spelled out the first time that they appear in the specification. With these amendments, it is respectfully submitted that the objection to the disclosure has been overcome.

Claims 1 and 2 were rejected under 35 U.S.C. 102(b) as being anticipated by Black. Claim 1 has been amended. With the amendment to claim 1, it is respectfully submitted that rejection of claims 1 and 2 as being anticipated by Black has been overcome.

The present invention as claimed is directed to a new method and apparatus for switching Fibre Channel Loop systems between a plurality of Fibre Channel Loop devices. The system switches are based at least in part on arbitrated loop primitives. In particular, the claimed invention

comprises a route determination apparatus that comprises a routing table. The routing table consists of Arbitrated Loop physical addresses (ALPA) and their associated ports. Note that the routing table is initially populated with ALPAs and associated ports through a *device discovery process that is initiated whenever a Loop Initialization Primitive (LIP) is detected*. “Each port captures the outbound and inbound frame ALPA bitmaps [during a full-Loop Switch loop initialization] and then computes the difference between the two bitmaps[.] The accumulated difference between the inbound and outbound bitmaps represents all ALPAs claimed on that port of the Loop Switch during loop initialization.” (Specification [0468]). The claimed invention therefore allows a low cost and simple deployment of interconnected Fibre Channel Arbitrated Loop devices by utilizing LIPs to initiate the route determination apparatus’s discovery process.

Black fails to disclose, teach, or suggest a device discovery process through the use of LIPs. Black instead discloses trapping OPN arbitrated loop primitives and implementing an ALPA active discovery by additional logic on each switch chip. (Col 39, line 55-Col. 40, line 51). As understood by Applicants, OPN-trapping is a learning process in which each port observes the transmission of OPN primitives “on its outbound local loop port and writes a destination address to a lookup table if a response to the outbound OPN on the local loop is detected on the local loop inbound data path. The port then posts a message on the protocol bus that its local loop has the destination address of the outbound OPN and giving its switch port ID.” (Col. 35, lines 45-54). Active discovery, as disclosed by Black, is initiated by asserting a signal on each switch chip while it is in a locked state. An OPN primitive is then transmitted onto a local loop using counter words as the destination address. The counters are incremented until all valid addresses have been attempted. As a result, Black discloses device discovery through OPN primitives by either OPN trapping or by transmitting OPN primitives through a counter. However, Black contains no disclosure at all regarding device discovery through the use of LIPs. Further, Black imposes additional overhead to handle these additional OPN primitives or wait for normal traffic to result in trapped OPN primitives. (Col. 40, lines 15-19, 31-33).

Because Black fails to disclose all of the limitations of claim 1, it is respectfully submitted that the rejection of this claim under 35 U.S.C. §102(b) as being anticipated by Black has

been overcome. In addition, because claim 2 depends from claim 1, the rejection of this claim has been overcome for the same reasons as provided above with respect to claim 1.

Claims 3-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Black, and further in view of Global Engineering ("Fibre Channel Arbitrated Loop" from IDS). Claims 3 and 6-8 have been amended. With the amendments to claims 3 and 6-8, it is respectfully submitted that the rejection of claims 3 and 6-8 as being unpatentable over Black in view of Global Engineering has been overcome.

In particular, claims 3 and 6-8 have been amended to recite that the routing table is initialized with a device discovery process during loop initialization. As discussed above with respect to claim 1, Black fails to disclose, teach or suggest this limitation. Furthermore, Global Engineering fails to make up for the deficiencies of Black, because Global Engineering also fails to disclose, teach or suggest this limitation.

Because neither Black nor Global Engineering, alone or in combination, discloses, teaches, or suggests all of the limitations of claims 3 and 6-8, it is respectfully submitted that the rejection of those claims under 35 U.S.C. §103(a) as being unpatentable over Black in view of Global Engineering has been traversed. In addition, because claims 4, 5, 9-14 depend from claims 3 and 6-8, the rejection of these claims has been overcome for the same reasons as provided above with respect to claims 3 and 6-8.


In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

If, for any reason, the Examiner finds the application other than in condition for allowance, Applicants request that the Examiner contact the undersigned attorney at the Los Angeles telephone number (213) 892-5752 to discuss any steps necessary to place the application in condition for allowance.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicants petition for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing Docket No. 491442011600.

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Respectfully submitted,

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